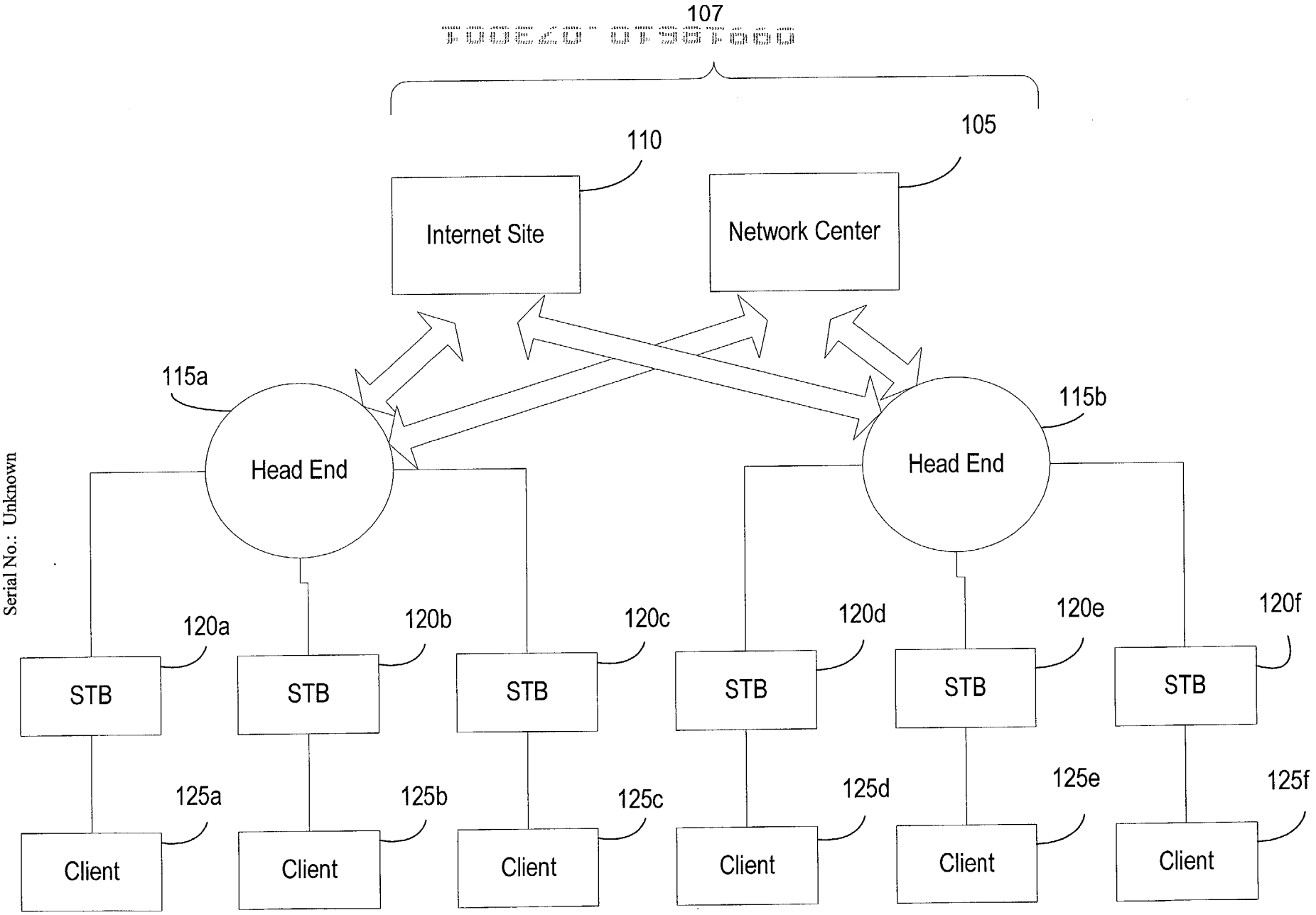
107
110
105
Internet Site
Network Center
115a
115b
Head End
Head End
120a
120b
120c
120d
120e
120f
STB
STB
STB
STB
STB
STB
125a
125b
125c
125d
125e
125f
Client
Client
Client
Client
Client
Client

Fig. 1

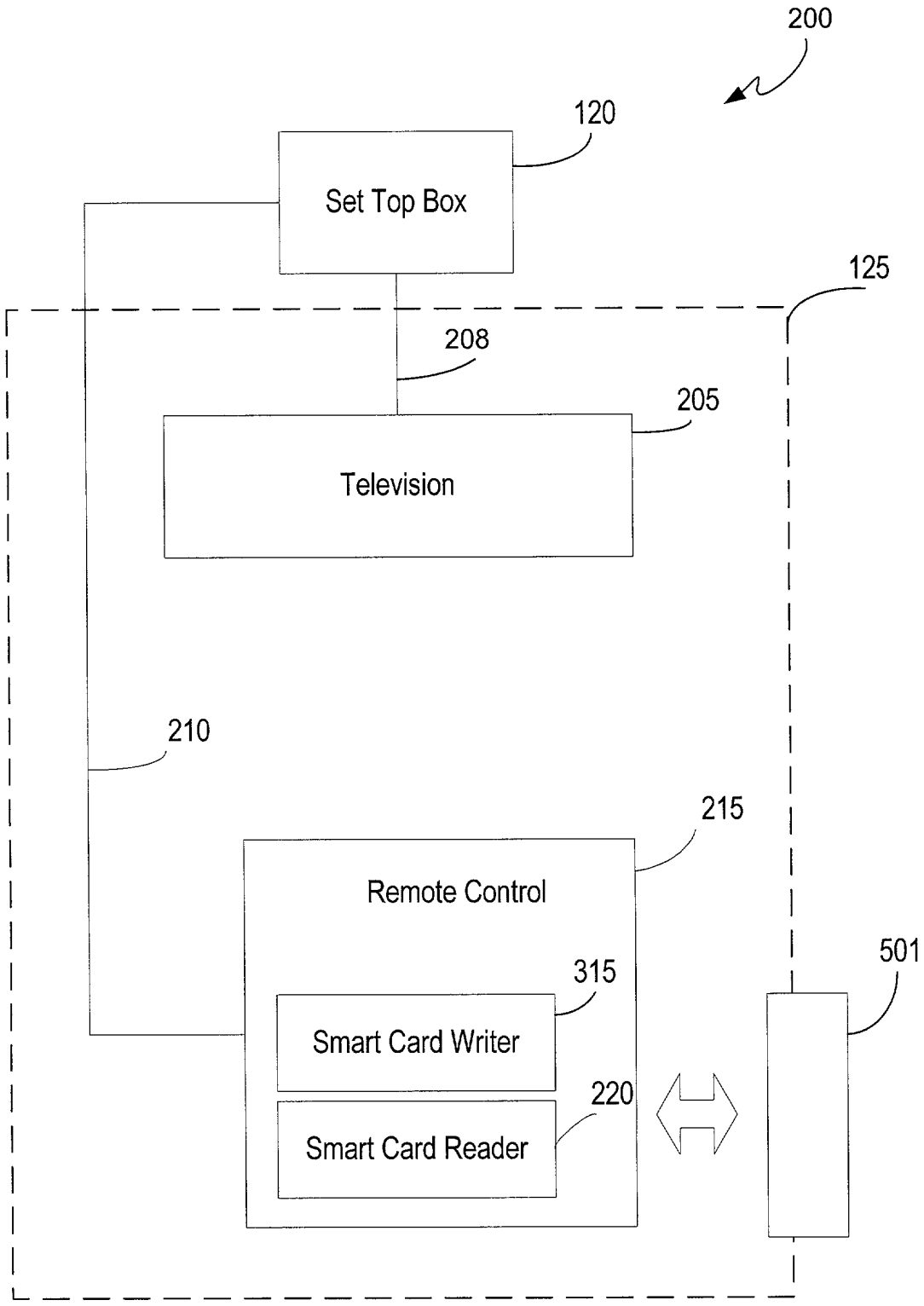
200
120
Set Top Box
125
208
205
Television
210
215
Remote Control
315
Smart Card Writer
220
Smart Card Reader
501

Fig. 2A

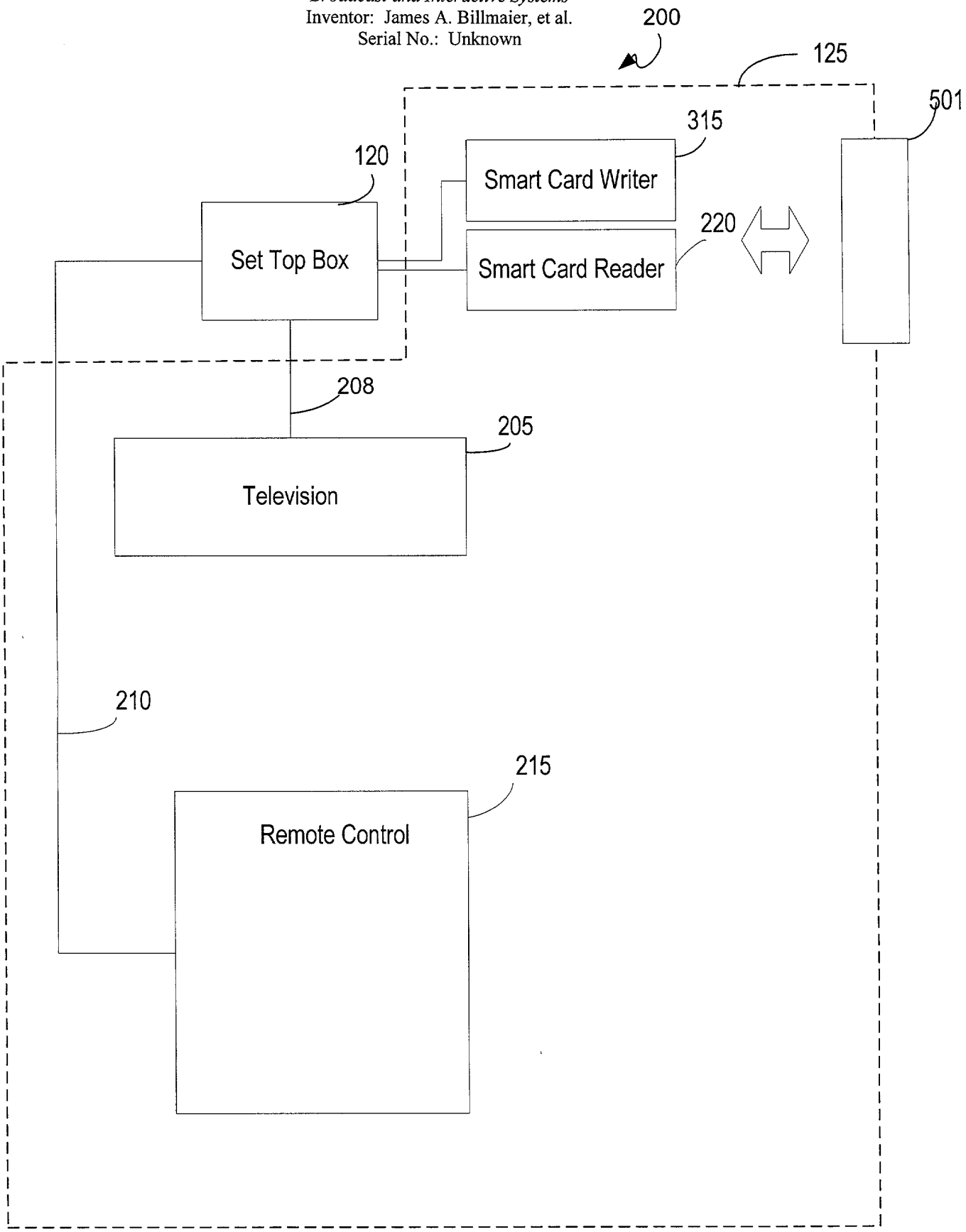
200
125
501
315
120
Smart Card Writer
220
Set Top Box
Smart Card Reader
208
205
Television
210
215
Remote Control

Fig. 2B

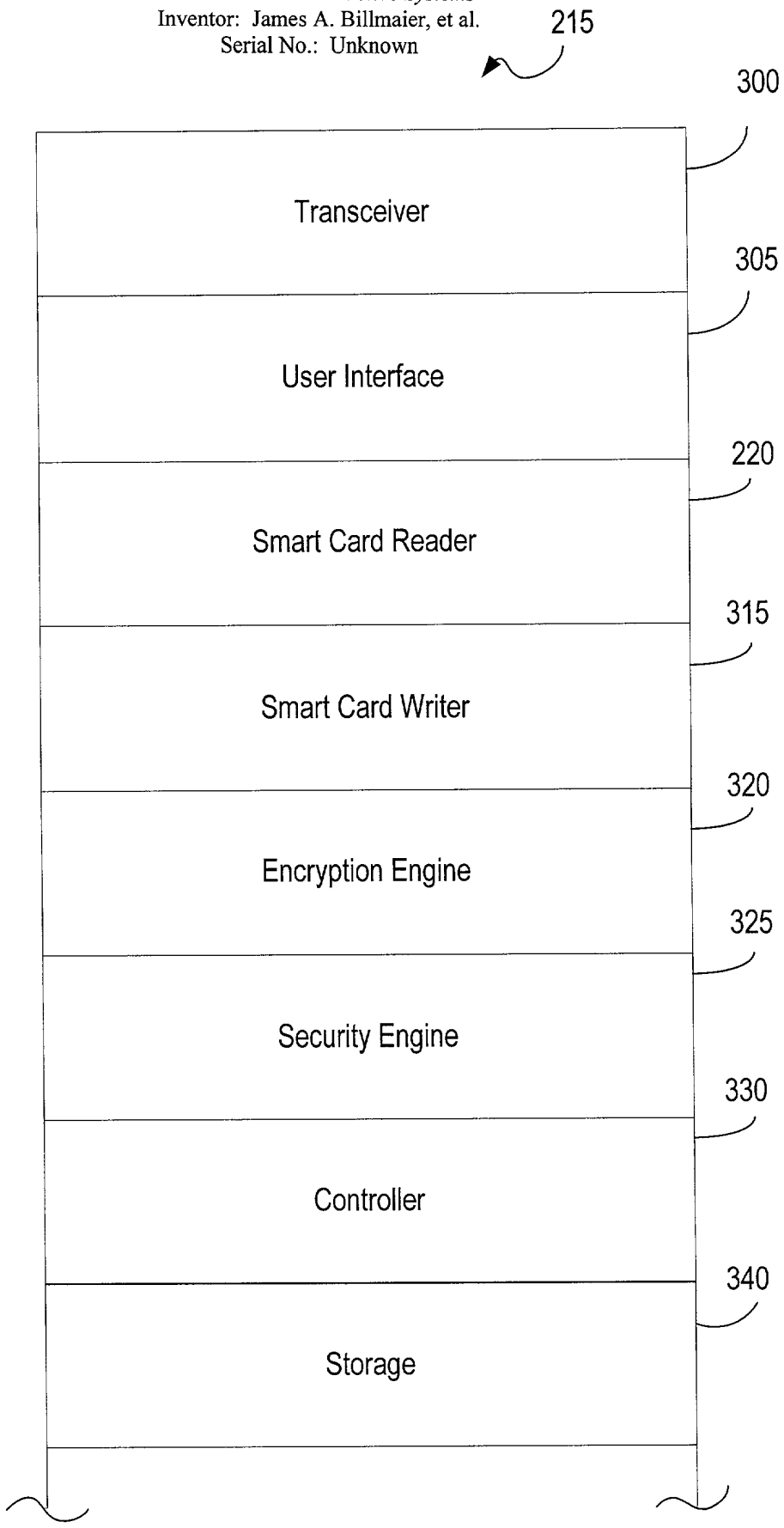
215
300
Transceiver
305
User Interface
220
Smart Card Reader
315
Smart Card Writer
320
Encryption Engine
325
Security Engine
330
Controller
340
Storage

Fig. 3

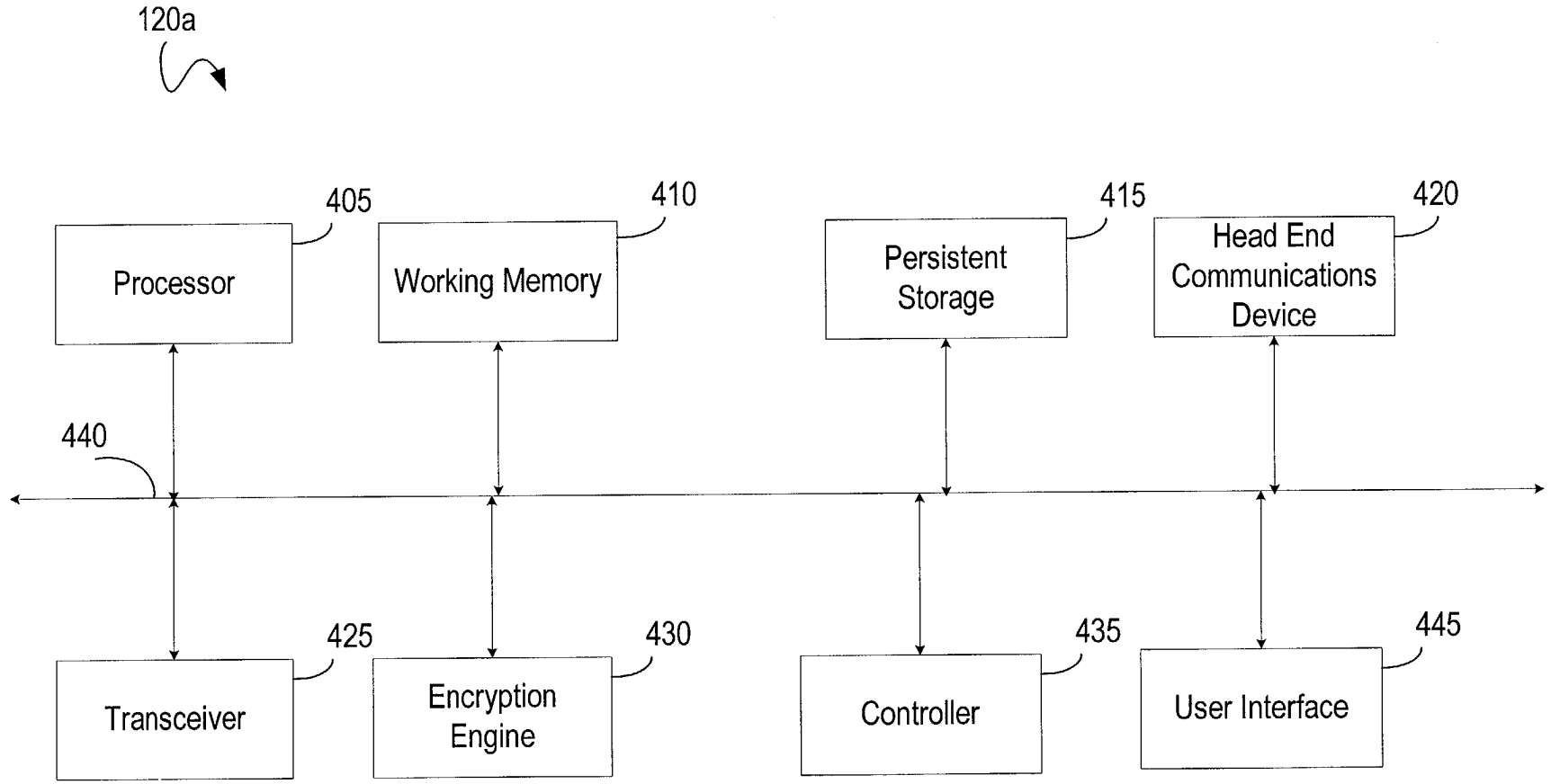
120a
405
Processor
410
Working Memory
415
Persistent Storage
420
Head End Communications Device
440
425
Transceiver
430
Encryption Engine
435
Controller
445
User Interface

Fig. 4

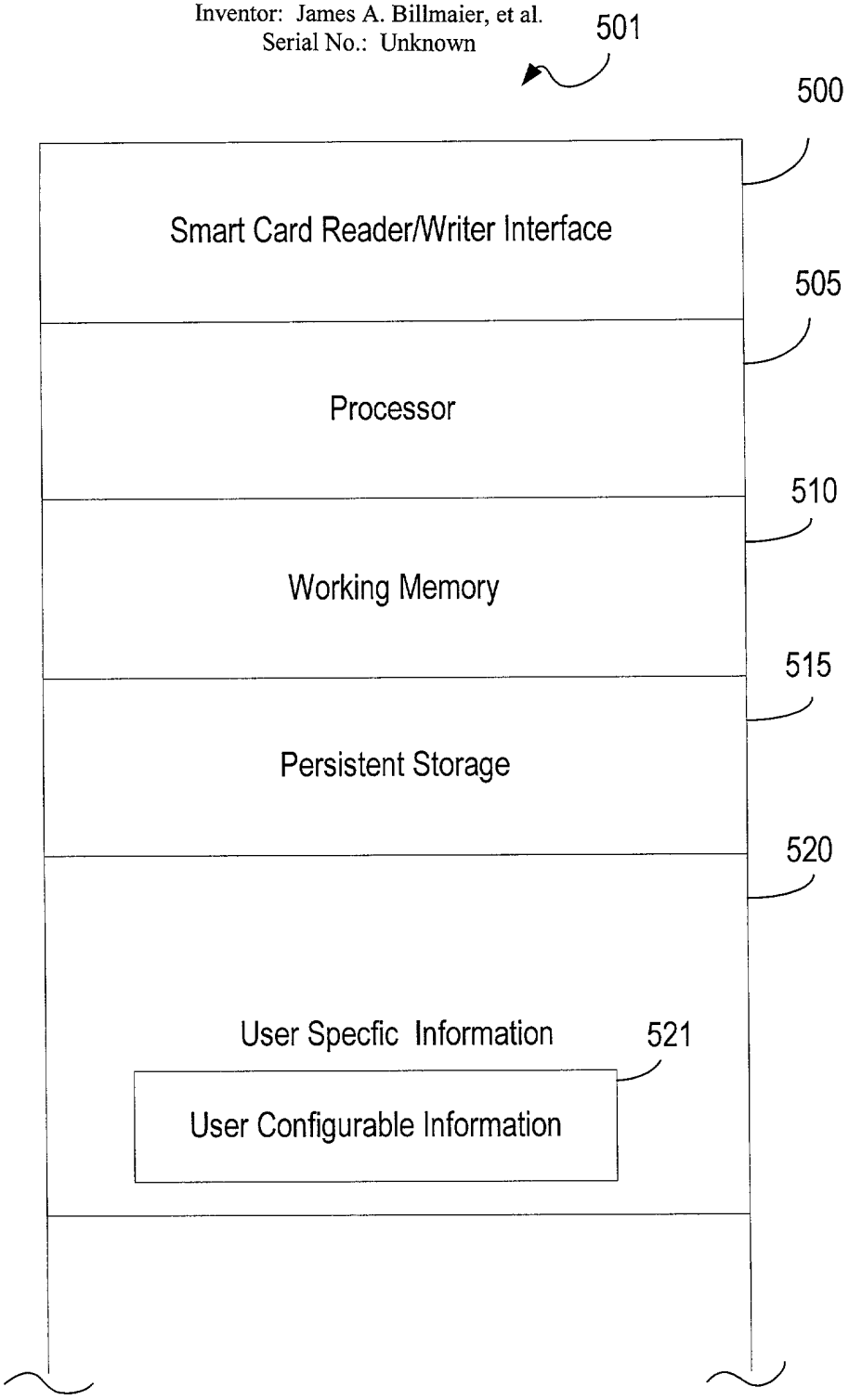
501
500
Smart Card Reader/Writer Interface
505
Processor
510
Working Memory
515
Persistent Storage
520
User Specfic Information
521
User Configurable Information

Fig. 5

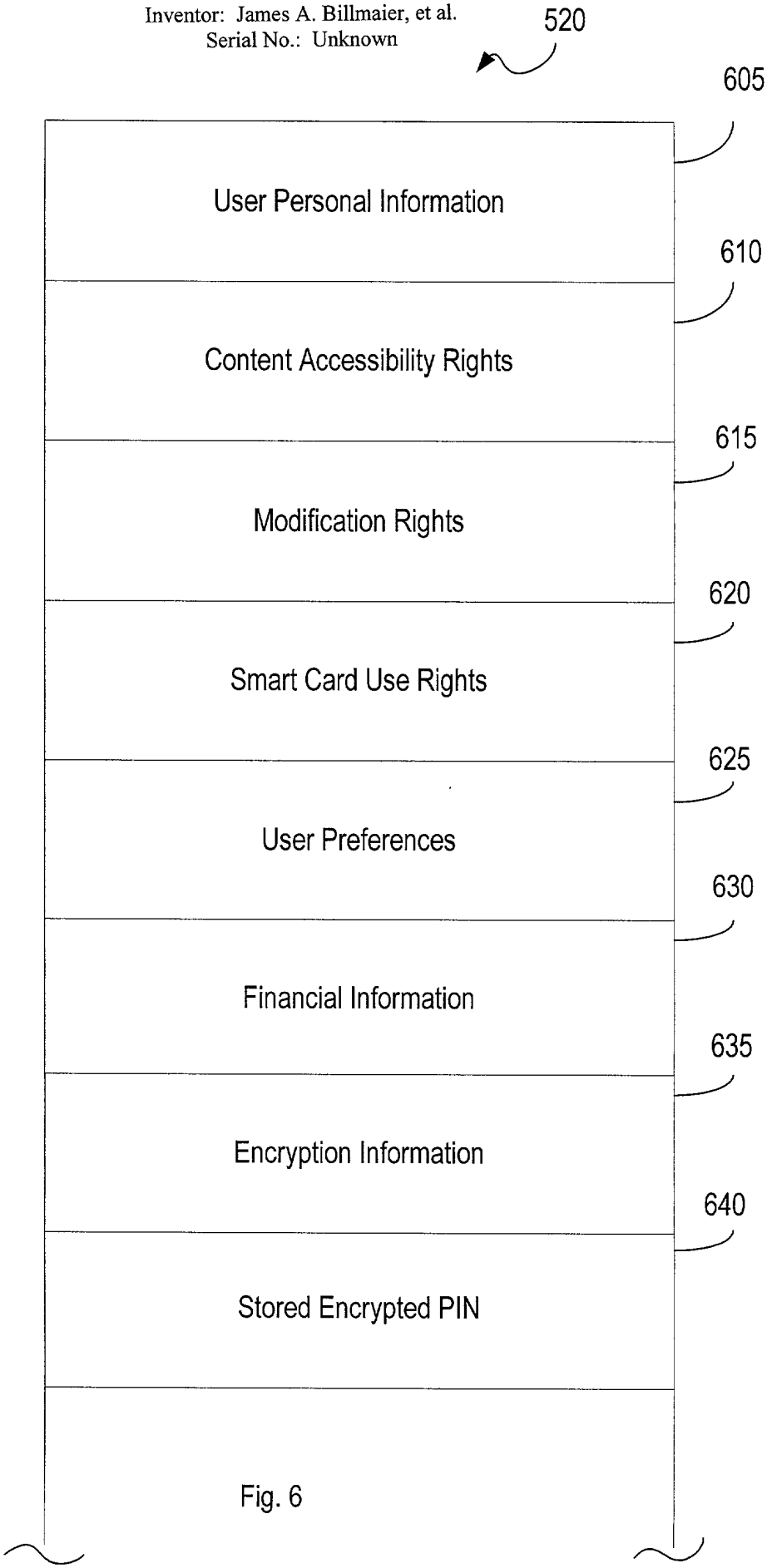
520
605
User Personal Information
610
Content Accessibility Rights
615
Modification Rights
620
Smart Card Use Rights
625
User Preferences
630
Financial Information
635
Encryption Information
640
Stored Encrypted PIN

Fig. 6

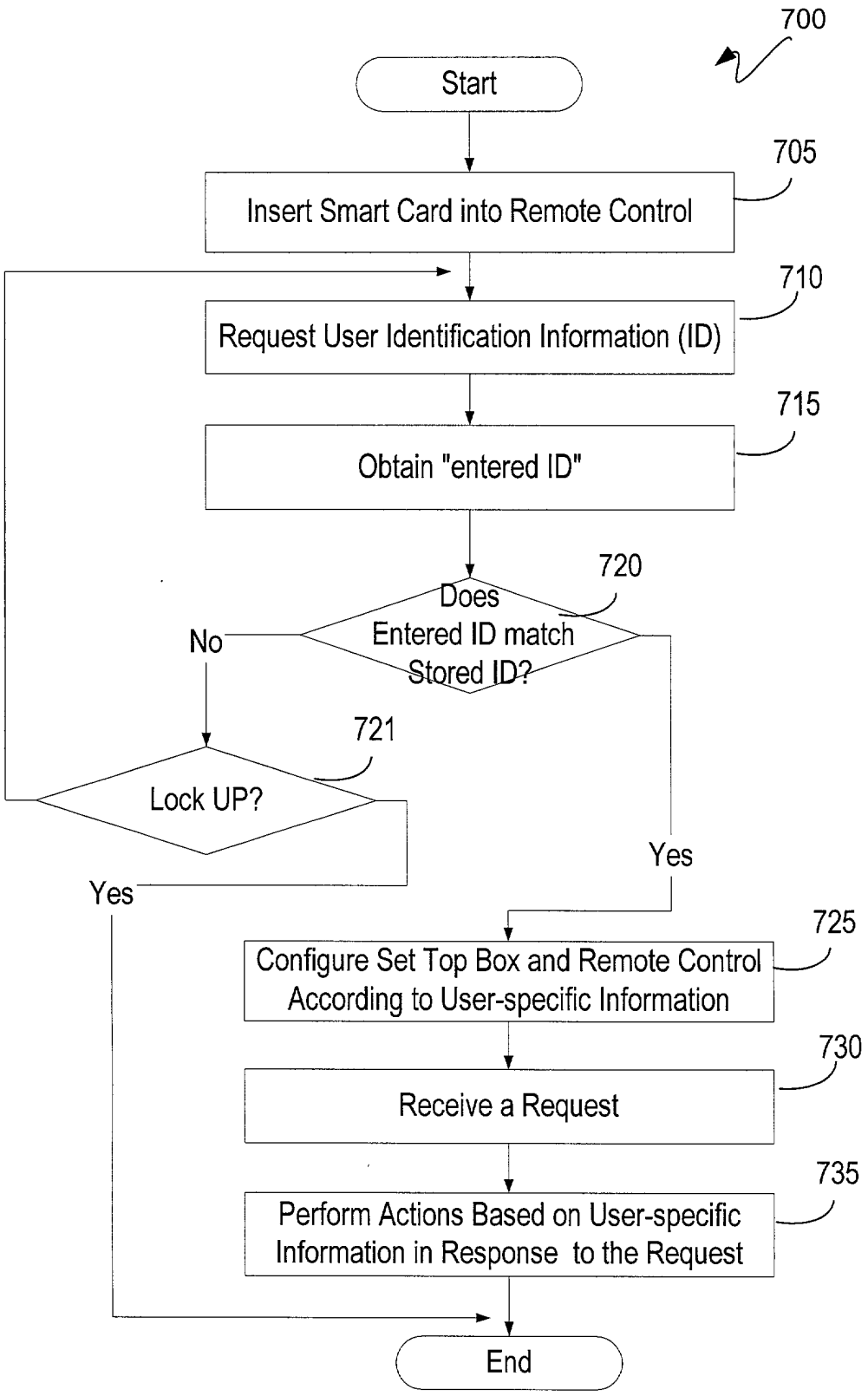
700
Start
705
Insert Smart Card into Remote Control
710
Request User Identification Information (ID)
715
Obtain "entered ID"
720
Does Entered ID match Stored ID?
No
721
Lock UP?
Yes
Yes
725
Configure Set Top Box and Remote Control According to User-specific Information
730
Receive a Request
735
Perform Actions Based on User-specific Information in Response to the Request
End

Fig. 7

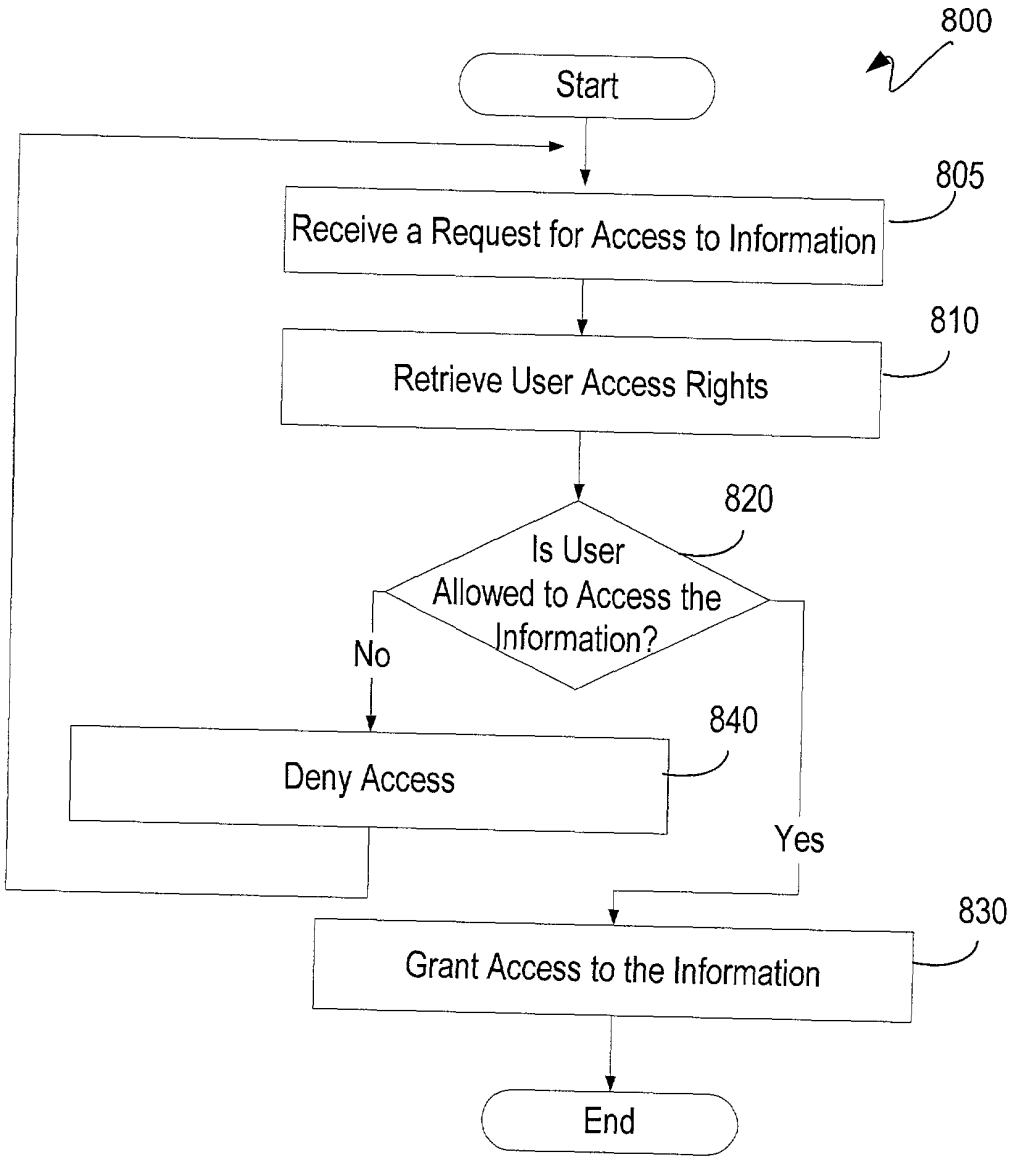
800
Start
805
Receive a Request for Access to Information
810
Retrieve User Access Rights
820
Is User Allowed to Access the Information?
No
840
Deny Access
Yes
830
Grant Access to the Information
End

Fig. 8A

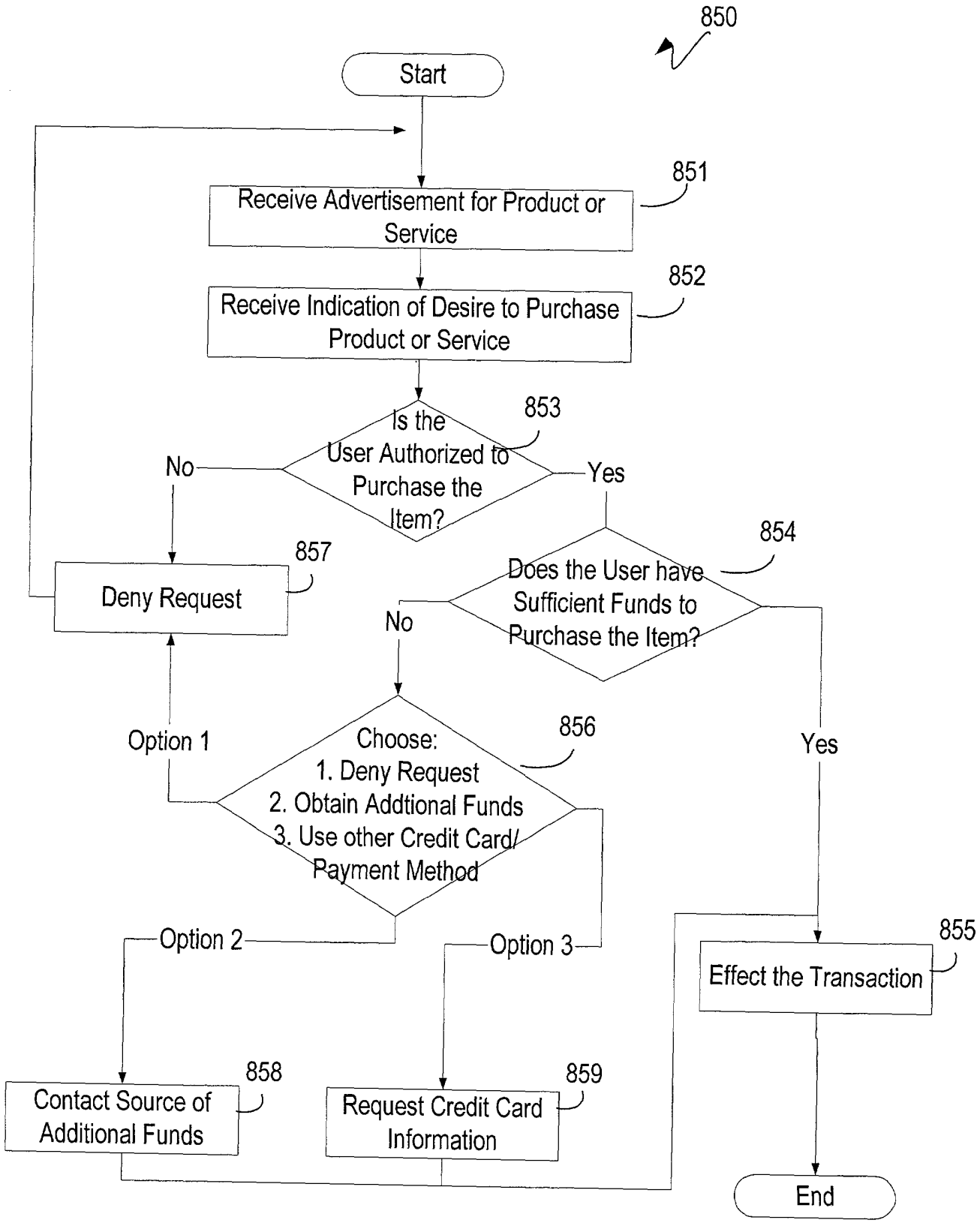
850
Start
851
Receive Advertisement for Product or Service
852
Receive Indication of Desire to Purchase Product or Service
853
Is the User Authorized to Purchase the Item?
No
Yes
857
Deny Request
854
Does the User have Sufficient Funds to Purchase the Item?
No
Yes
Option 1
856
Choose:
1. Deny Request
2. Obtain Addtional Funds
3. Use other Credit Card/ Payment Method
Option 2
Option 3
855
Effect the Transaction
858
Contact Source of Additional Funds
859
Request Credit Card Information
End

Fig. 8B

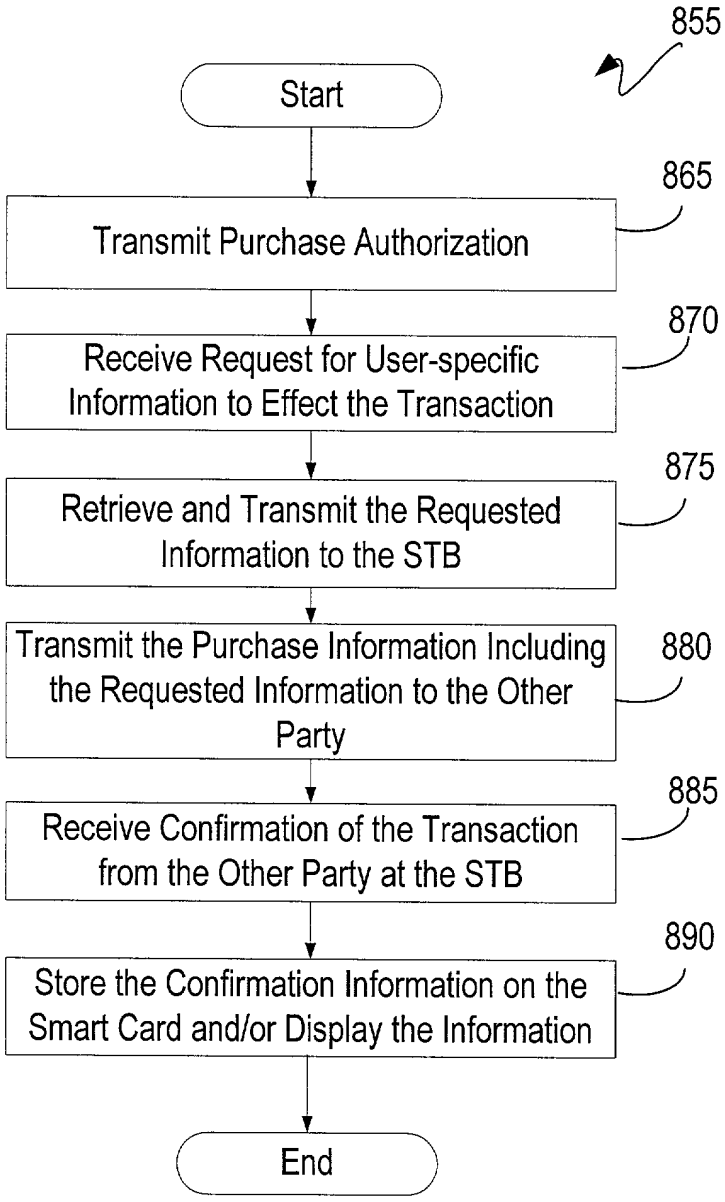
855
Start
865
Transmit Purchase Authorization
870
Receive Request for User-specific Information to Effect the Transaction
875
Retrieve and Transmit the Requested Information to the STB
880
Transmit the Purchase Information Including the Requested Information to the Other Party
885
Receive Confirmation of the Transaction from the Other Party at the STB
890
Store the Confirmation Information on the Smart Card and/or Display the Information
End

Fig. 8C

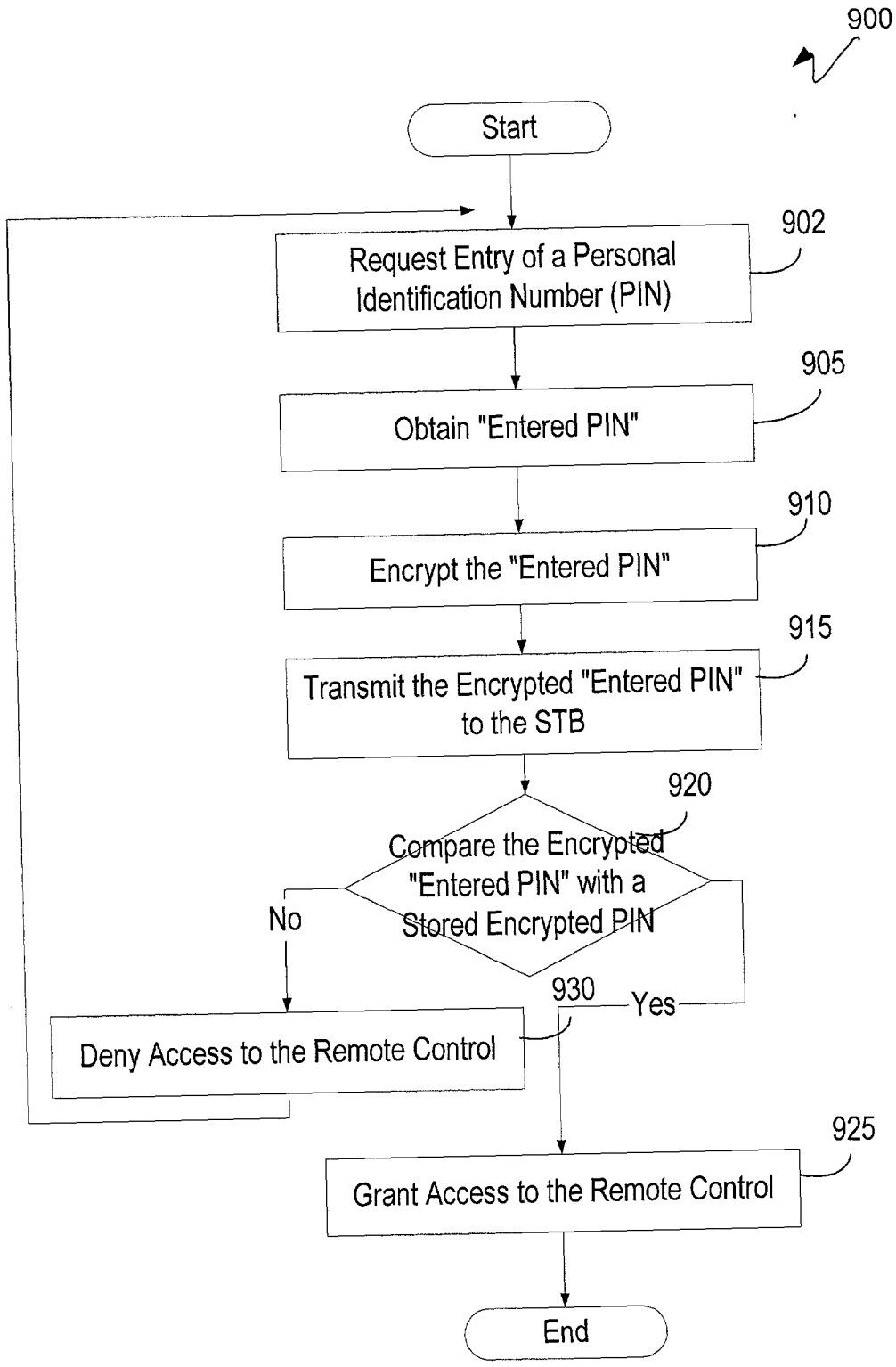
900
Start
902
Request Entry of a Personal Identification Number (PIN)
905
Obtain "Entered PIN"
910
Encrypt the "Entered PIN"
915
Transmit the Encrypted "Entered PIN" to the STB
920
Compare the Encrypted "Entered PIN" with a Stored Encrypted PIN
No
Yes
930
Deny Access to the Remote Control
925
Grant Access to the Remote Control
End

Fig. 9

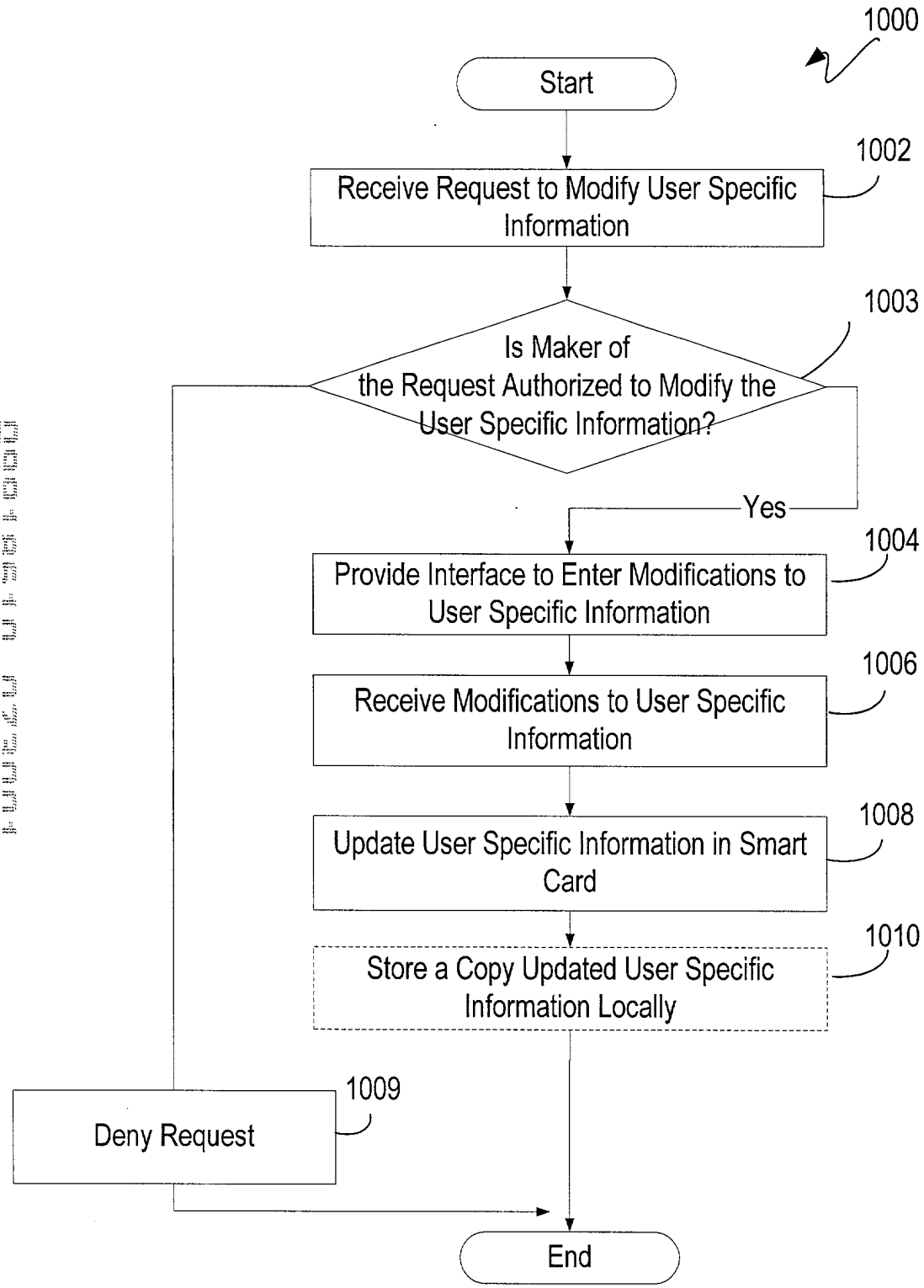
1000
Start
1002
Receive Request to Modify User Specific Information
1003
Is Maker of the Request Authorized to Modify the User Specific Information?
Yes
1004
Provide Interface to Enter Modifications to User Specific Information
1006
Receive Modifications to User Specific Information
1008
Update User Specific Information in Smart Card
1010
Store a Copy Updated User Specific Information Locally
1009
Deny Request
End

Fig. 10A

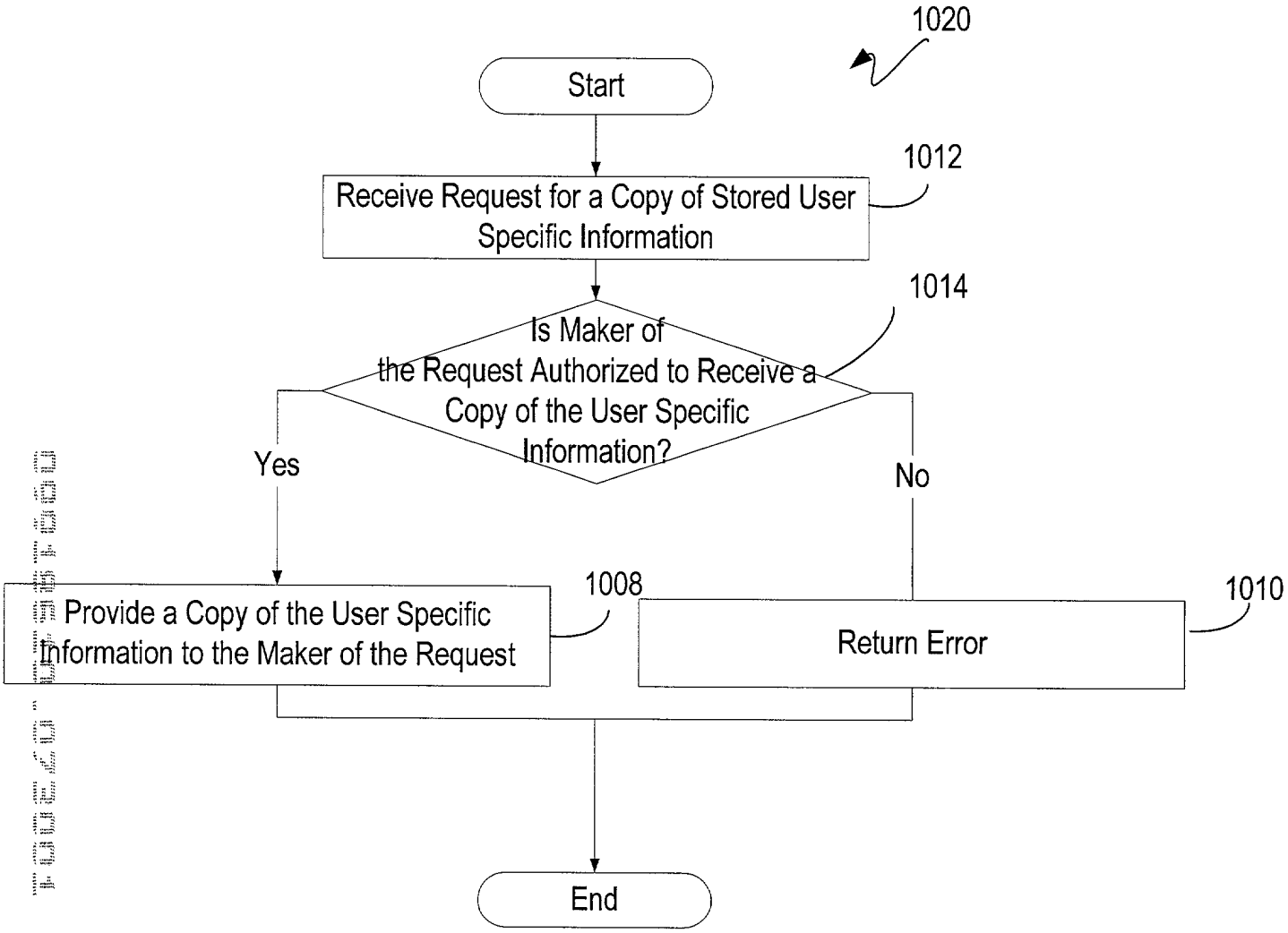
1020
Start
1012
Receive Request for a Copy of Stored User Specific Information
1014
Is Maker of the Request Authorized to Receive a Copy of the User Specific Information?
Yes
No
1008
Provide a Copy of the User Specific Information to the Maker of the Request
1010
Return Error
End

Fig. 10B